

Montana Board of Oil and Gas Conservation Environmental Assessment

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Denbury Onshore, LLC

Well Name/Number: Elob 13-19NH 761

Location: NW SW Section 19 T7N R61E

County: Fallon, **MT;** **Field (or Wildcat)** Lookout Butte Field

Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple drilling rig for a 16,736'MD/ 9,147' TVD, directional development well. Red River Formation at total depth with objective formations Interlake, Stony Mountain and Red River, which are field producing formations.

Possible H₂S gas production: Yes, possible H₂S gas from these Mississippian, Devonian, Silurian-Ordovician formations.

In/near Class I air quality area: No Class I air quality area in area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using a triple derrick drilling rig to drill a 16,736'MD/ 9,147' TVD, directional Red River Formation well test. If there are existing pipelines for associated gas in the area, gas can be gathered or if no gathering system nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001) and main hole will utilize oil based invert mud to TD.

High water table: No, high water table anticipated at this location.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Waterhole Creek, about 3/10 of a mile to the southwest from this location. Waterhole Creek is about 3/5 of a mile to the south.

Water well contamination: None, closest water well is about 4/5 of a mile to the northeast and 3/5 of a mile south. Depth of these domestic water wells are 100'

and 120'. Surface casing will be set below all known water wells in the area. Surface hole will be drilled with freshwater and freshwater drilling fluids, rule 36.22.1001. Surface casing will be set to 1,000' and cemented back to surface. Porous/permeable soils: No, sandy clay soils.

Class I stream drainage : No Class I stream drainages in the area of review.

Mitigation:

- ☐ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☒ Closed mud system
- ☒ **Off-site disposal liquids (in approved facility)**
- ☐ Other: _____

Comments: 1000' of surface casing cemented to surface is adequate to protect freshwater zones. Also, fresh water drilling mud systems to be used to drill the surface hole, rule 36.22.1001. Oil base invert drilling fluids will be used to drill the hole from under surface casing to TD. Oil based drilling fluids will be recycled and completion fluids will be hauled to a commercial Class II disposal. Solids will be disposed of off site.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No high erosion at this well site due to medium cut and fill requirements, medium cut, up to 13' and medium fill, up to 9.1' required for two wells, the Elob 13-19NH and Elob 13-19SH..

Loss of soil productivity : None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Large, 300'X400' polygon shaped location.

Damage to improvements: Slight, surface use is grazing land.

Conflict with existing land use/values: Slight

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other _____

Comments: All of the access will be over existing Water Hole Trail and Dance Hall Road. About 182' of new road will be constructed into this location off the county road. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1.4 miles south, 4/5 of a mile to the southwest, 2 miles to the west and 1.7 miles to the northwest. The town of Baker is about 6 miles to the west.

Possibility of H2S: Yes H2S possible from the Mississippian, Devonian, Silurian-Ordovician formations..

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☒ Other: Standard H2S training for the rig personnel and H2S safety equipment on location.

Comments: No special concerns. Proper BOP stack (5000 psig annular with double blind rams and pipe rams) and surface casing should be able to control any problems that could occur.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None, identified

Proximity to recreation sites: Lake Baker, about 7/8 of a mile to the west northwest from this location.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists three (3) species of concern. They are the Chestnut-collared Longspu, Greater Sage Grouse and the Sprague's Pipit. Two (2) potential species of concern are listed: Brook Stickleback and Creek Chub.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other:

Comments: The surface ownership is private land and Fallon County. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

 avoidance (topographic tolerance, location exception)

 other agency review (SHPO, DSL, federal agencies)

 Other: _____

Comments: On private surface land and Fallon County. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desire to preserve these sites or not, if they are found during construction of this wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

 Substantial effect on tax base

 Create demand for new governmental services

 Population increase or relocation

Comments: No concerns, a development oil well within the Pennel Oil Field.

Remarks or Special Concerns for this site

Well is a 16,736'MD/ 9,147' TVD, directional Red River Formation well test in the East Lookout Butte Oil Field.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/John Gizicki

(title:) Compliance Specialist

Date: April 11, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)
Fallon County water wells
(subject discussed)

April 11, 2014
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Fallon County
(subject discussed)

April 11, 2014
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T7N R61E
(subject discussed)

April 11, 2014
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 18 T7N R60E
(subject discussed)

April 11, 2014
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____